THE ZOOLOGIST

FOR 1862.

The Song of Birds. By Colonel H. W. NEWMAN.

THIS subject is treated of in Dr. Bechstein's work on cage birds, and I wish to mention to the ornithological readers of the 'Zoologist' a few observations made during my experience.

Mr. Broderip is of opinion that love and rivalry are the main causes of their song, but in reply to this our beautiful songster the thrush sings a few days in October, and, in mild weather, often in the third week of November, and frequently most of December; but in these months the thrush is perched a great deal higher from the ground, and consequently not so well heard as in the breeding season in the spring, when he is nearer his nest. I have never heard the wild thrush sing in September, but in late summers frequently a week in the first part of August: in 1859 the summer was so early and hot that the thrushes near me ceased singing on the 24th of July, a week earlier than usual.

Dr. Bechstein is of opinion that there are two species of the nightingale, one which sings by day and another which sings by night. I do not fall into this theory in England, as I have noticed that where one or two pairs of these birds have frequented a particular copse, hill or hedgerow, I have always found them both by day and night close to the very spot at both periods. These birds are very constant to their locality, and Dr. Bechstein may have mistaken this by the difference of their song, as they never sing nearly so loud by day as at their usual time near midnight. I never heard a nightingale sing by day in its full splendour of song: when singing he is perched generally within twenty feet from the ground.

Mr. Macgillivray gives a most interesting account of the formation of throats of singing birds.

The Hon. Mr. Daines Barrington gives a scale of the comparative merits of singing birds, but not in my ear a just one, as he places the thrush at No. 10, after the whole of the finches, the linnet, blackcap, titlark, skylark and woodlark. I have added another scale of my own. Mr. Daines Barrington must have had a peculiar ear for music, although I hear he was a good amateur musician. My selection contains ten of the best singing birds in England, leaving out the minor songsters in the scale.

THE COMPARATIVE MERITS OF TEN ENGLISH SONG BIRDS.
(The nearest to perfection is represented by 20).

		Mellowness of tone.	Sprightliness.	Plaintiveness.	Variety of notes.	Degrees of Compass and Execution.
1.	Nightingale	15	12	20	16	20
2.	Song Thrush	8	9	10	11	12
3.	Blackbird	6	2	10	6	10
4.	Skylark	4	12	3	10	10
5.	Blackcap	10	14	2	8	9
6.	Woodlark	16	2	7	6	9
7.	Titlark	7	6	1	5	7
8.	Robin	4	10	11	8	10
9.	Fauvette or Pettichaps	5	7	4	6	8
10.	Missel Thrush or Storm Cock	4	6	3	4	6

Nightingale (*Sylvia luscinia*). The nightingale among birds is, to make a comparison, "*Luna inter minora Sidera*," and no wonder that poets and lovers of birds have written so often on this matchless songster.

> "Sweet bird, thou sing'st away the early hours
> Of winters past. * * *
> What soul can be so sick which by thy song,
> Attired in sweetness, sweetly is not driven
> Quite to forget earth's turmoils, spites and wrongs,
> And lift a reverend eye and thought to heaven?
> Sweet artless songster, thou my mind dost raise
> To airs of spheres, yea, and to angel's lays."
>
> DRUMMOND.

The nightingale is remarkable for the curious circuit it makes in the migration to this island, being confined to certain counties in England and Wales. It seems that mild temperature has nothing to do with it in one sense, as one was never heard singing in Cornwall and very seldom in Devonshire, and only a solitary instance in that part of Devon bordering on Somerset. They seem to be more numerous in Hampshire, Kent, and all the counties near the metropolis, than elsewhere. The line of demarcation taken by the nightingale has been the wonder of many naturalists, and much has been written on the subject; my own opinion is that some peculiar insects, the main object of its food and search, must be the cause, and not the climate of the circumscribed district, which it inhabits during the five months of its sojourn in England. Experiments have been tried, in Scotland, to alter their range of flight by placing the eggs of these birds in the nest of the robin. The young nightingales have been hatched and flown from these nests, but have never returned to Scotland, nor have they been heard to sing there, nor in the counties of Northumberland, Durham or Lancashire, and little proof even in Yorkshire. The greatest puzzle to me is why they are not plentiful near Exeter, as one would think, from the mildness of the climate of Devon and the dryness of some of its air, the same food would be found as in the adjoining counties of Somerset and Dorset.

Song Thrush (*Turdus musicus*). Dr. Bechstein says that in Germany, where he lived, the thrush is a migrating bird, but it is not so in England, as it is to be seen in our gardens in the most severe winters, and, as I mentioned before, sings in a mild winter in December and January. In a trip I took to Ostend a bird followed the steamer for several hours after leaving Ramsgate, and about little more than half way across it became so tired that it settled on the rigging of the vessel, within four yards of the deck. I examined it and found it was a thrush. On coming near the Flemish shore it immediately took wing towards Ostend. This happened in the month of July. A single bird is often known to take a flight of this sort, as observed by seafaring men. Dr. Bechstein says "The melody of birds, like the fragrance of flowers cannot be [properly] described; it must be listened to, and that by one whose senses are properly attuned to outward harmony by an indwelling and abiding love of the beautiful and the pure in Nature: to him the soaring lark will seem indeed to pour forth at 'heaven's gate' a morning hymn of praise, and the nightingale to chant, amid the leafy woodlands, a vesper song of thankfulness; the full chorus of feathered minstrelsy will be to him like an angel choir, scattering melody on all around, which sinks in the soul like summer rain into the earth, gladdening and refreshing it;" and, as Broderip expresses it also, "The melody of birds finds its way to the heart of every one." I place our beautiful indigenous song thrush next to the nightingale. The thrush has at least eleven varieties of note, some of them very sweet and plaintive, and possesses great execution. I never could reckon more than fifteen or sixteen varieties of note in the unrivalled song of the nightingale. I need say but little of either of these songsters, as they have been the theme of poets and the admirers of sweet sounds in the rural districts for centuries, and they may be said really to have a "local habitation and a name," for they are both most constant to locality near their resting place. The nightingale, although his stay is so short, and his song still shorter, may always be found within fifty to sixty yards of the same spot in the month of May, in some favourite pollard oak or thick low underwood or hedge.

Blackbird (*Turdus merula*). The beautiful plaintive song of this bird places him third on my list of our singing birds. It seldom commences its song before February, unless January be nearly the extreme of mildness. It has about six varieties of note, and has "the soft melody of sounds, the sweeter for simplicity." The blackbird is most brilliant in song in showery weather in May, mixed with hot gleams of sunshine.

Skylark (*Alauda arvensis*). The skylark, as Wordsworth says,

> "Leaves to the nightingale her shady wood,"

and becomes a "pilgrim of the sky." The lark is underrated in its song by many, being unheard in half its beautiful song from the height to which it soars. It mounts to

> . . . . "The last point of vision and beyond,
> A daring warbler."
> "True to the kindred points of heaven and home."

The descent to its nest is unique and picturesque. Its compass is about 12, and it possesses great variety of note.

Blackcap (*Sylvia atricapilla*). This magnificent garden warbler enlivens our shrubberies for two or three months, but his fidgetty and volatile character render his visits so short and transient, that unless his nest is very near he is off in a minute or two, or even less, to range elsewhere. On a moonlight night I have heard this bird sing as early as twelve to one o'clock at Midsummer. It has been compared to the nightingale, but it is far inferior: the "minor" and plaintive notes of the nightingale are quite wanting in the blackcap. It is called the "monk" on the Continent. It is very properly rated as the first of the garden warblers.

Woodlark (*Alauda arborea*). This bird is almost unequalled in mellowness of tone, and is superior to the skylark in richness and clearness of its song. In consequence of its being a favourite it has become a scarce bird in Gloucestershire, for the birdcatchers there take them in the greatest numbers. The compass of voice of the woodlark is small, and his variety of notes few, but the clearness is perfect and mellifluous.

Titlark (*Anthus pratensis*). A pretty little lively bird, which may be seen and heard in almost every parish in England, in May, June and part of July. Sprightly and lively to a degree, with no great compass of voice, the paucity of these birds seen in confinement pretty well shows how far they are favourites, and they are nearly as constant to the locality of their breeding place as the skylark. The titlark has a pleasing variety of song, between the skylark and woodlark, but inferior to both.

Robin (*Sylvia rubecula*). This bird is an exception to all the singing birds, for, unless the weather is very severe or very temperate, it sings almost every week in the year. Although a rather monotonous song it is a mixture of the serious and sublime. The robin is admired by many as a first-rate singing bird.

Fauvette or Pettichaps (*Sylvia* ——— ?). This little bird, often mistaken for the blackcap, visits our gardens and delights us with its song. It is nearly of the same fidgety nature as its migrating congener, but not so loud. It is a deadly devourer of currants and raspberries, the latter particularly. If these birds want their throats moistened in the month of June they do not keep them long dry, for they are most mischievously active; few grudge them their robbing, except the market gardeners.

Missel Thrush or Storm Cock (*Turdus viscivorus*). This, the largest singing bird in England, is a great favourite with me. It has often been mistaken, even by persons who have resided in the country all their lives, for the blackbird, but it is of course very different and very inferior; one or two notes of the missel thrush are like those of the blackbird. It sings in the most tempestuous weather, and I heard one last year during a perfect hurricane, in the month of January, perched on a tree about thirty feet from the ground. It had its face to the wind, and seemed to enjoy the tempest. Its pretty wild chant, although wanting in variety and compass, has something very grand in it, both during a storm and during a lull after a storm. It is very fond of a high Italian poplar or an elm for its song. When surprised by seeing an enemy it utters a coarse scream. I hope this was the sound my old neighbour, Mr. Knapp, in his 'Journal of a Naturalist' mistook for the song, which he designated a "coarse sound." I certainly am one of those who reckon the missel thrush a really eccentric and pleasing bird, as he sings when no other bird attempts it, but then it generally happens that the bird is not so often heard as many others, unless very tall trees abound near our habitations; he never condescends to be very near the ground during his wild chant, which can be heard at a great distance.

The restless little goldfinch, the sprightly linnet, the chaffinch, with his tune going prettily down a full octave, the wren and hedgesparrow, are all inferior singers, and scarcely deserve a place in the category of first-rate singing birds, although the first-named of these is often kept in confinement more for his beautiful plumage and docility than his song, like the piping bullfinch. The bullfinch is a nice bird in a room, but its note is so weak that in a shrubbery one must be very near to hear it at all.

I have omitted to mention another bird, which some of our English poets designate a singing bird; I mean the cuckoo: at all events the cuckoo is a most pleasing harbinger in April of generally the first lovely vernal days. If we are to reckon the cuckoo really a singing bird, then my old friend the missel thrush must yield the palm to the cuckoo, the delight of the schoolboy, as the largest singing bird in England. The cuckoo is also at times a flying songster.

"The same when in my schoolboy days
I listened to that cry
Which made me look a thousand ways,
In bush and tree and sky.

* * * *

O blithe new comer! I have heard,
I hear thee and rejoice.
O cuckoo! shall I call thee bird,
Or but a wandering voice?"

I hope my ornithological readers will not be offended by my lesser notice of the other minor songsters of the grove, the wren, reedsparrow, redpole, hedge accentor, siskin, the pretty meek and innocent wood wren and the tomtit, each of which have their short notes and wild spring calls. All these minor songsters add to the brilliancy of the feathered choir on a fine early spring morning, and causes those who really delight in the country to feel what Addison describes as the height of vernal enjoyment, scarcely capable of being expressed, but at the same time enthusiastically felt by the lovers of Nature.

H. W. Newman.

Hillside, Cheltenham,
November 8, 1861.

Recollections of the Swans and Geese of Hudson's Bay.

By GEORGE BARNSTON, Esq., of the Hon. Hudson's Bay Company.*

THE birds comprising the two genera Cygnus and Anser are, with slight exception, the largest of the Palmipedes, or web-footed fowls, found in North America; and, being generally difficult of approach, and at the same time highly prized as an article of food, any account of their migrations and habits becomes interesting. Of the many who may have enjoyed the relish of a well-seasoned wild goose at the sumptuous banquet, few are aware of the distance the bird may have travelled, or of the many perils, by flood and field, through which it may have passed.

On the coast of Hudson's Bay their manners may be studied to great advantage. There they repose after a long and fatiguing flight; there they enjoy a perfect surfeit on the juicy roots of the swamps, and the tender sprouting herbage of the boundless downs; and there, assembled in a mass along the sea-girt shore, they follow the never-varying course of the points and headlands that stand out revealed as the line of march of all their ancestors who have gone before them.

The swan, except in a few particular localities, is a scarce rather than a plentiful bird on the shores of Hudson's Bay. Of somewhat ponderous flight, swans are seen at the same time as the other migratory tribes, winging their way to the secluded recesses of the north, resting themselves throughout the interior, and losing units of their number here and there by the Indian's gun. In the scarcity of their favourite food, the tubers of the Sagittaria sagittifolia, they have recourse to the roots of other plants, and the tender under-ground runners of grasses in the higher latitudes. They sometimes breed in the interior before arriving at the coast. I had two eggs brought to me from the borders of a lake near Norway House, latitude nearly 55° N.; but it was impossible for me to say whether these were of the Cygnus americanus or C. Buccinator; the probability rests with the former.

Towards Eastmain James's Fort, in James's Bay, a considerable number of swans hatch. A few are killed by the natives there, who watch the game as it passes up and down narrow rivers communicating with the sea, and flowing from lakes of some magnitude scattered over the interior. In the winter months all the northern regions are deserted by the swans, and from November to April large flocks are to be seen on the expanses of the large rivers of the Oregon territory and California, between the Cascades Range and the Pacific, where the climate is particularly mild, and their favourite food abounds in the lakes and placid waters. Collected sometimes in great numbers, their silvery strings embellish the landscape, and form part of the life and majesty of the scene. These societies break up as they advance upon their long spring journey to the north. They are then dispersed in small bands and but few together, each of a pair at last separating and betaking to the cares of the season of incubation. In the most secluded and unfrequented districts, where there is ample water range, they rear their young.

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* Read before the Montreal Natural History Society, and reprinted from the 'Canadian Naturalist' for October, 1861.

Superior to the swans as an article of food, the geese of every species are tenfold in number, and they form the favourite dish of the Indians of Hudson's Bay. When the long and dreary winter has fully expended itself, and the willow grouse (*Tetrao Saliceti*) have taken their departure for more northern regions, there is frequently a period of dread starvation to many of the natives, who are generally at that time moving from their wintering grounds to the trading posts. The first note, therefore, of the large gray or Canada goose (*Anser canadensis*) is listened to with a rapture known only to those who have endured great privations and gnawing hunger. The melancholy visages brighten, and the tents are filled with hope, to which joy soon succeeds, as the happy father, or hopeful son and brother, returning successful from the hunt, throws down with satisfaction and pride the grateful load.

The Anser canadensis here alluded to is the largest of our geese, and is almost always first seen in the Hudson's Bay Company's territories. It may be only a single straggler which has lost its mate, or at most five or six together. These are the advanced guard of the serried legions of other water-fowl which nature and instinct send forth every spring from the south, to occupy, during the productive summer, the land of the north, and to partake of the plentiful and luscious repasts that Providence has, during their absence, been storing up for them, in a hidden yet nascent state.

The Canada gray goose, as if aware of the general favour in which it is held, spreads itself very diffusively over the whole continent. Its disposition has less of wildness in it than that of the snow goose. We come upon it hatching in quiet recesses and corners, surrounded by reedy waters, where "rushes and grasses do most abound." It is at home over the whole wooded portion of the country, equally so in the extensive marshes of the sea-coast, and on the mossy barrens of the Chipewyan and Esquimaux lands. During the winter, like other species, it takes refuge in the more temperate portions of the country, courting always open water. I have seen a flock in the strong open current of the St. Lawrence, above Lachine, near Montreal, in the month of January or February; but such an occurrence is rare. In this latitude—say 45° west of the Rocky Mountains, but especially on the coast of the Pacific—they are plentiful during the whole winter, in mild seasons. Before Oregon was settled by the Americans the Hudson's Bay Company's post of Fort Vancouver used to be supplied by Indian hunters with gray geese, large and small, as well as with occasional swans and white geese; and this at times so liberally that a day's rations twice a week could be furnished to an establishment of thirty to forty men. Some of these geese had been killed by the bow and arrow. This game formed our best rations, but it was seldom in such condition as it is to be had in the north after it has enjoyed a week or two on the feeding-grounds. I have no doubt that the great mass of the gray geese pass their winter to the south of the Platte waters, in the swamps of Florida and the Lower Mississippi, and on the waters of the western side of the continent, towards their outlets into the Pacific. Now that the rifle and fusee have been introduced so plentifully into California and Oregon, it is to be feared that the numbers of the larger wild fowl will decrease rapidly. The bow and arrow formerly thinned them considerably; now, with an increasing population, the gun will have more fatal effect.

The lesser gray goose (*Anser Hutchinsii*) arrives, in subarctic regions, later than the other, and about the same time as the snow goose (*A. hyperboreus*). They are shot occasionally in the interior when they alight, and in considerable numbers at Albany, and elsewhere along the coast of James's and Hudson's Bays. Unlike the large gray goose, it can scarcely be said that they incubate in a scattered and detached manner over the whole extent of the wooded country; they rather proceed in large and united bands, keeping a lofty flight, and making few stoppages until they reach the coast. On arrival there, about the beginning of May, they immediately commence feeding in the salt-marshes, on the soft white rooted grasses, continuing to do so for a fortnight or three weeks, and at last becoming quite plump, and capital subjects for the table. When fully in good plight, they take their departure for more arctic regions, at nearly the same time as the snow geese, not to appear again until they return with their young broods in the month of September. These smaller gray geese are killed in fewer numbers than the larger species on their passage to Hudson's Bay, which may be accounted for by their higher and more continuous flight; but if once they settle upon their feeding-grounds the tables turn upon them, and the slaughter committed in their ranks is wonderful, and would sate the greatest Nimrod that ever waded swamp.

The Brent goose (*A. Brenta*), the calliwappemaw of the coast Crees, is but little looked after or cared for in Hudson's Bay, being a small species, keeping out to sea on the shoals and towards lowest water-mark, and affording a dish not in high estimation. Their arrival in the north is later than most of the waders and Palmipedes.

The snow goose, although it plays a less conspicuous part in the interior of the country, where it seldom alights except along the margins of the larger lakes and streams, becomes, from its consolidated numbers, the first and greatest object of sport after the flocks alight in James's Bay. The havoc spread throughout their ranks increases as the season advances, and their crowds thicken, and even the Indian becomes fatigued with the trade of killing. In the fall of the year, when the flocks of young "wewais," or "wavies" as they are called, are numerous and on the wing between the low-tide mark and the marshes, or are following the line of coast southerly, it is no uncommon occurrence for a good shot, between sunrise and sunset, to send to his lodge above a hundred head of game. In such cases the hunter is stationed in what is called a stand,—a space from four to five feet square, enclosed by willow-twigs and long grass-stalks,—from which he fires, with forms of geese or "decoys" set up a short distance in his front. The geese fly towards these, when he gives out their peculiar call, and frequently he has his wife or son, or grown-up daughter, to load the discharged gun for him, while he fires with the loaded.

These wavies, or white geese, form the staple article of food as rations to the men in James's Bay, and are the latest in leaving the coast for southern climes, an event which takes place towards the end of the month of September, although some weak broods and wounded birds linger behind until the first or second week in October. They are deliberate and judicious in their preparation for their great flight southwards, and make their arrangements in a very business-like manner. Leaving off feeding in the swamps for a day or more, they keep out with the retreating ebb tide, retiring, unwillingly as it were, by steps at its flow, continually occupied in adjusting their feathers, smoothing and dressing themselves with their fatty oil, as athletes might for the ring or race. After this necessary preparation the flocks are ready to take advantage of the first north or north-west wind that blows, and, when that sets in, in less than twenty-four hours the coast that had been covered patch-like by their whitened squadrons, and wildly resonant with their petulant and incessant calls, is silent as the grave—a deserted, barren and frozen shore.

The friendly intercourse that exists between these geese and the blue wavies (*A. cærulescens*) has induced some to suppose that they were merely varieties, which is a mistake. The young white wavies arrive from the north with their parents without mixture of other geese, and they have nearly the same white garb as the old birds, but with their heads of a dirty reddish tinge, exactly as if they had been rubbed by the hair-dresser with the red rust of iron; and the bill, as is always the case with the young of the feathered race, is tender, soft and compressible. On the other hand, the A. cærulescens comes down upon the east main coast also in perfectly distinct flocks, the young of a more diffused blue colour, as well as being of smaller size. The full-grown blue wavy is besides somewhat larger than the white, and has its flesh most decidedly of a much fairer hue. In the spring James's Bay is frequently crossed by both species as far north as Capes James and Henrietta Marie, and occasionally two or three of the blue may be observed in a large flock of the white on the Albany or west shore. White again are seen mixed up to a certain extent with the full flocks of blue on the Eastmain. This is not singular, their cry being almost the same and their habits similar, and they are, it must be allowed, closely allied species.

According to Indian report, a great breeding-ground for the blue wavy is the country lying in the interior of the north-east point of Labrador, Cape Dudley Digges. Extensive swamps and impassable bogs prevail there; and the geese incubate on the more solid and the driest tufts dispersed over the morass, safe from the approach of man, or any other than a winged enemy. Neither fox nor wolverine can penetrate to them, nor pass over the deceitful quick bogs to disturb their quiet.

The whitefronted goose (*A. Gambelii*), called by some the laughing goose, is seldom seen in the southern part of Hudson's Bay. At York Factory they are less rare, but at Churchill frequent enough. I am disposed to believe that this goose is more an inhabitant of Central and Western America during the winter months than of the eastern board. Proceeding northwards, therefore, in the end of April and early part of May it comes upon the coast of Hudson's Bay towards

York Factory, and is scarcely seen in James's Bay. I have not been able to ascertain whether any detachments are met with on the Atlantic coast of Labrador. Do they not feed on the productions of dry downs and barren and rocky country, in preference to the swamp grasses and Algæ? On the Lower Columbia, and in Oregon or the Willamette Valley, they abound with other geese, sometimes in nearly equal proportions, and the snow goose still delighting to keep the sea coast, while the A. Gambelii and the gray geese take to the rivers and lakes of the interior. These are seldom frozen to the southward of latitude 45°, and very severe weather only requires from this kind of game in that quarter a slight removal of one or two degrees to the southward.

Of all the geese I have enumerated the blue wavy (*A. cærulescens*) appears to be the least known in the settled and civilized portions of North America. In May it frequents only James's Bay and the Eastmain of Labrador, and it is probably the case that its hatching-ground is on the north-west extremity of that peninsula, and the opposite and scarcely-known coast of Hudson's Straits. In the autumn their bands, increased six or sevenfold by the young, return by the same route, but where they winter is the query. I have not seen them on the Columbia nor on the north-west coast. Do they adopt the sea-board on a lower latitude? Are they to be found in winter retreat in Southern California and Mexico?

It is very difficult to form anything like an accurate idea of the numbers of the various species of geese that have just been passed under review. Of the quantity shot at particular points where they become an article of provision we may arrive at a wide but still a better estimate. Seventeen to twenty thousand geese are sometimes killed by the Albany Indians in the autumn or fall of the year, and ten thousand or more in the spring, making a total for these coast Crees alone of at least 30,000; not speaking so certainly of other natives, I would place the Moose Indians as killing, at all seasons, 10,000; Rupert's River natives, 8,000; Eastmain and to the north, including Esquimaux, 6,000; the Severn coast I cannot compute as yielding less than 10,000; the York Factory and Churchill Indians, with Esquimaux beyond, must dispose of 10,000; making a total of geese killed on the coast of 74,000.

As many geese must die wounded, and others are got hold of by the foxes and wolverines, we may safely allow the total loss to the flocks while running the fiery gauntlet as equivalent to 80,000. I was at one time inclined to believe that two-thirds of this number was, or might be, the proportion for the autumn hunt, but it is probably nearer three-fourths, and we have thus 60,000, in round numbers, brought down from the newly-fledged flocks, as they pass southernward along the bay. I have lately been informed by an old and experienced hunter that he believes that for every goose that is killed above twenty must leave the bay without scaith, as although there is sometimes destruction dire among some lots that approach the gun, and that feed in quarters frequented by hunters, yet innumerable families of them alight on remote and quiet feeding-ground, remain there unmolested, and take wing when the cold sets in, with their numbers intact. I must allow the correctness of this remark, and the deduction to be drawn from it is that 1,200,000 geese leave their breeding-grounds by the Hudson's Bay line of march for the genial south. Of the numbers to the westward along the arctic coast that wend their way to their winter quarters straight across the continent, we can form but a very vague opinion, but computing it at two-thirds or more of the quantity supposed to leave the eastern part of the arctic coast, we cannot have less than two millions of geese composing the numerous battalions which pass over the continent between the Atlantic and the Rocky Mountains, borne aloft generally like the scud, and as swiftly hastened on by the force of the boreal blast.

I ought to observe that the Brent geese (*Anser Brenta*) are not included in the above estimate. They are pretty numerous on the Atlantic coast, but are quite neglected by the Indians in general of Hudson's Bay.

Two small species of south-west habitat, the Dendrocygna autumnalis and D. fulva, never come north, so far as I know. I have never seen the first, but have shot one out of a pair of the latter on the banks of the Columbia, above Okanagan. This, I daresay, is usually its limit to the north, and I believe it has never been seen to the eastward of the great stony ridge. Neither of these elegant little geese ever visit Hudson's Bay.

The Nest and Eggs of the Bohemian Waxwing.[*]

THE first intimation I received from Mr. Wolley that the discovery was accomplished was contained in a letter written by him on his way up the Baltic, and dated the 2nd of September, 1856. He says, "Let me tell you now, whilst I think of it, that I have some reason for believing that the waxwing makes its nest in good-sized fir-trees in the month of June. I give you this hint in case I should not live to give you more certain information; but you remember that I am not to return home without a waxwing's nest in my hand."*

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[*] Extracted from a paper in the 'Ibis' for January, 1861, intituled "Particulars of Mr. J. Wolley's Discovery of the Breeding of the Waxwing (*Ampelis garrulus*), Linn.), by Alfred Newton, M.A., F.L.S.," and kindly communicated by the author.

His next letter is dated "Muoniovora, Sept. 14, 1856," and after describing his own doings and those of the friends I had made the preceding year, telling me of the expected scarcity of food, and giving the general results of the nesting season, goes on to say:—

"I have still to tell you of Ludwig's expedition with Piko Heiki to Sardio, on the Kittila River. It was early in June, and he had to wade over Pallas-tunturi up to his middle in snow. Arrived at Sardio, he found the lads there all at home, deep in dirt and laziness. He soon extracted from them the information that a pair of birds had been seen about, which they took to be 'Tuka rastas;' and Ludwig himself had seen such a bird, and this bird's egg was entered in my list. * * * Ludwig immediately started off into the forest, and sure enough he saw a bird which he thought was 'Sidensvans;' but he was not quite sure, for the end of its tail looked white in the sun instead of yellow, as in your picture;† but the next day, or in the evening, it was cloudy, and Ludwig saw the yellow; and now he had no longer any doubt. He said he would give all the lads day-money, and they must all search, even if it were for a week, till they found the nest. They sought all that night and the next day till about mid-day, [when] a lad called out that he had found the nest; and there it was, with two eggs, about nine feet high, on the branch of a spruce. * * * After five days Ludwig snared the old bird—a beautiful cock; and you may fancy with what pleasure I took it in my hand, and saw that there were no doubts remaining. Indeed, I had before been pretty confident about it: Ludwig had written that I might be quite satisfied that it was the right bird. Martin Pekka had the picture with him at Sodankyla, and as soon as he came back Ludwig compared the bird with it, and made certainty doubly sure. The other picture went to Gellivara. * * * I do not expect waxwings in that quarter. You can fancy how eagerly I waited for Ludwig to produce the eggs. With a trembling hand he brought them out: but first the nest, beautifully preserved; it is made principally of black 'tree-hair' (lichen), with dried spruce twigs outside, partially lined with a little sheep's grass and one or two feathers,—a large deep nest. The eggs—beautiful!—magnificent!!—just the character of the American bird. An indescribable glow of colour about them! Ludwig had made for them such a box, that even if a horse trod upon it it would not break. * * * The next incident was the arrival of Niku, with a couple of young birds scarcely able to fly, which he had caught, as he said, out of a brood of five, by Pallas-tunturi. One of these Ludwig had stuffed, and a rare little beauty it is; the other was much knocked about, and Ludwig made nothing of it. Then a little girl, just ten days ago, brought three eggs from the other side of Nälima (about twenty-five miles from here), which she said were taken on a certain day in July, and were 'Kukhainen.' They were undoubted waxwing, but are very badly blown by her, as they were just hatching. At midsummer Sardio Michel brought in a small batch of 'Sidensvans,' with the birds (four in number) to each nest. So now I have a series, though but a very short one, of this *rara avis in terris*—this forerunner of famine, and of infinite value when one thinks of the uncertainty of getting it again."

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* The division of the paragraphs indicates the omission of portions of the original: I thought it better to leave the paragraphs somewhat unconnected than to supply the thread of the narrative by any additions of my own.—*E. N.*

† This picture was one of several coloured sketches of different birds sent to Mr. Wolley by Mr. Hewitson and myself, to assist him in making known his wants to the natives.

In all, Mr. Wolley obtained twenty-nine eggs of the waxwing in 1856. Later on in the autumn an intelligent Lapp informed him that he remembered having seen a bird some twenty years before, and once or twice since had seen or heard another, but that was perhaps ten years previously. On the other hand, in 1856, he had seen them some half-dozen times, and found a nest, from which, however, the young ones flew. This nest he subsequently brought very carefully, with the branch on which it was built, to Mr. Wolley, by whom it was sent the following year, by the hands of Dr. Edwin Nylander, to the museum of the University of Helsingfors. The Lapp added that in the spring he had observed of the birds that "they flew up in the air, and came and sat in the same spot whence they had flown—he thought in play; but perhaps they were catching insects," as Mr. Wolley himself suggested.

In 1857 it seems that the waxwing was still more rarely distributed in Lapland than it had been the preceding year. Mr. Wolley was of course exceedingly desirous of taking a nest with his own hands, and for this purpose devoted to the search much of his time before crossing the district hitherto unexplored by him between the Muonio valley and the head-waters of the Tana. In this object he was only partially successful. He writes, "For myself I could not, in spite of every exertion, get a living waxwing within range of my pair of eyes. I took a nest which had been deserted a day or two before, and from which something had thrown the eggs, one after another, upon the ground as fast as they were laid; of course, broken to bits. It was close to the house of Sardio. In vain I wandered through the woods, and scarcely shut my eyes at night. Many people were on the look-out; but, after the nest of three eggs I told you of from Jerisjärvi, the only arrival has been a perfect nest of five eggs found by Piko Heiki, whom I desired to give up everything else, and work all the mountain-district for waxwing." The nest thus taken by Mr. Wolley, and which I intend to retain in my possession, as being the only one taken by him, bears date "16th June, 1857." It was built in a spruce, and agrees in most respects with those previously seen and described by him. The eight eggs just mentioned were the only ones obtained by him that year."

The summer of 1858, when Mr. Wolley was with me in Iceland, was "a great year for waxwings." Not far from a hundred and fifty nests were found by persons in his employment in Lapland, and some of them close to Muoniovara. It seems, as nearly as I have been able to ascertain, that no less than six hundred and sixty-six eggs were collected; and more than twenty more were obtained by Herr Keitel of Berlin, who happened, without I believe any expectation of the luck that was in store for him, to be that year on the Muonio River. A detailed account of Herr Keitel's success appeared some months after in the 'Naumannia,'* from the pen of its editor, and the specimens of the eggs figured in that magazine were obtained through him. It is unnecessary for me to go into details respecting the magnificent series of eggs which Mr. Wolley was thus enabled to add to his cabinet. The nests were built mostly in spruce and Scotch-fir trees (*Pinus abies* and *P. sylvestris*)—chiefly, I think, the former. The usual complement of eggs is certainly five; but six not uncommonly, and seven and four occasionally, were found. The second week of June seems to be the general time for the birds to have eggs; but

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[*] 'Naumannia,' 1858, p. 498, pl. 1, figs. 5—8.

there are some which must have been laid in the last days of May, and others (perhaps second broods) a month later.*

This same year (1858) saw an Englishman, however, accomplish what Mr. Wolley only partially succeeded in doing. The interesting account of an independent discovery of the breeding of the waxwing, with which the kindness of Mr. H. E. Dresser has furnished me, will, I am sure, be read with pleasure, and I leave that gentleman to narrate his exploit in his own language:—

"In 1858 I was a short time in Uleaborg, while on my way from Stockholm *viâ* Tornea to St. Petersburg, and having a little time on my hands I spent it in company with Mr. John Granberg, of Uleaborg, collecting in the neighbourhood of the town. We intended to pass a day or two amongst the small islands near the harbour, and determined to visit one called Sandön, about four Swedish (twenty-seven English) miles from Uleaborg.

"We (that is, Granberg, a student by name Heikel, and myself) left the town on the evening of the 3rd of July, in a little boat, and sailed to Warjakka, an island outside the harbour, where we provisioned for our trip. We then started for Sandön; but, there being but little wind, did not arrive off the island until about two o'clock in the morning. We grounded at some distance outside, and all three stripped for a swim, to find some deeper water; but, not being able to get the boat much nearer, we made her fast and carried our traps on shore, getting almost devoured by mosquitoes in so doing. We had heard that there was a rough log-hut somewhere on the island, built by the Karlö peasants, who come annually to take away the marsh-grass, and accordingly set off in search of it. We were crossing a small open place when we started a bird, which Granberg, who was on first, said was a waxwing (*Ampelis garrulus*), and having my gun loaded with dust-shot, I followed it up and succeeded in shooting it. It proved to be an adult female, and had evidently been incubating. We searched all the bushes and trees near, in hopes of finding a nest, but without any success; and as the mosquitoes were very troublesome, we determined to find the hut, take a nap, and continue the search afterwards. We soon did find it, and after smoking out the mosquitoes and stopping up the smoke-hole, turned in on some marsh-grass, and did not awake until pretty late in the day. After breakfast we separated to explore the island; and Heikel and myself, meeting soon after on the opposite side, went on in company, but had no success, only finding a few small birds. * * *

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* The American species would seem sometimes to breed much later in the season. Dr. Brewer told me at Boston, August 31st, 1857, that on the preceding day he had seen a cedar-bird's nest, with eggs still unhatched.

"We had quite given up all hope of finding the waxwing's nest, when, as I was crossing a little barren to join Heikel, I saw, in a small pine tree close to where he was standing, a nest with several young ones in it sitting bolt upright, just as grebes sit. Going nearer, I instantly knew them to be waxwings. We threw off our game-bags, and, while he stood below, I climbed up to the nest, which was in the fork between the main stem and the first branch, and not above nine or ten feet from the ground. The moment I touched it, the young ones (five in number) flew out. I jumped down, made a cut at the largest with my cap, and secured him; but Heikel did not get one. Directly the young one which I had caught began to cry out, several waxwings flew from the neighbouring thicket, all however keeping out of gunshot except two, which came close round me, and both of which I shot. I then sat down and imitated, as well as I could, the call of the old birds. I was soon rewarded for my trouble by a young one coming out of a blueberry bush close by and calling lustily. Heikel and I gave chase and secured him. Granberg, who had heard my two shots, then coming up, we commenced a diligent search for the other three young ones, but had to give it up as hopeless, owing to the thickness of the under-scrub. I then climbed up again and took the nest away carefully, so as to preserve the shape, and to my great delight found one egg in it. We hunted for several hours in the higher part of the island for another nest; but, although we saw about nine old birds, we did not succeed in finding another nest. We did not shoot any more, hoping to find nests there at some future period.

"We returned to Uleaborg the same evening, when I skinned my birds. We ought to have made an equal division of the spoil, but neither Granberg nor Heikel would hear of any division; consequently I have still two old birds and two young ones, besides the nest and egg, in my possession. I regret to say I did not look to see what the young birds had been fed upon; but when I took the nest I found one or two of last year's dried cranberries in it."

In 1859 the waxwing bred, but in no great numbers, in the Muonioniska and Kittila districts. Though much sought for, not more than forty-six eggs were obtained by Mr. Wolley's collectors.

During the past summer it seems to have been rather more numerous.

I am told of fifty-two eggs having been collected for me by the agents of my late friend, whom I keep in my own employment, but these specimens have not hitherto arrived. Early in the present year, Mons. C. F. Dubois described and figured the egg of the waxwing in the 'Revue et Magasin de Zoologie,'* but without stating whether his example had been obtained from Mr. Wolley, or derived through another source. M. Dubois states that its egg "ressemble beaucoup à celui du Coccothraustes vulgaris et du Lanius ruficeps; il peut facilement être confondu avec les œufs de ces derniers." In this latter assertion I do not agree with him. Out of the several hundred specimens which form the series I possess, there is not one, I think, which could be taken for that of either the hawfinch or woodchat shrike, though I freely admit there is a likeness to the eggs of both.†

Occurrence of the Peregrine Falcon in Cambridgeshire.—I have just seen a male peregrine falcon, in its second year's plumage, which fell to the gun of Mr. J. Johnson, of Wicken Hall, Cambridgeshire, at which place it was shot on Monday, November 11th, 1861. The markings upon its breast are particularly bright for an immature bird, calling to one's mind, at first sight, that of the hobby: the ash-gray of the adult is becoming distinctly visible upon the back and tail. The visits of the peregrine falcon to this county are at very uncertain periods, and always limited to not more than two or three in the same year. Upon reference to my note-book I find it is seven years since the last capture, so that with us this bird must be considered a rare visitant.—*S. P. Saville; Dover House, Cambridge.*

Capture of the Merlin in Cambridgeshire.—Like the peregrine falcon, with us the merlin cannot but be termed a rare bird. I am indebted to Mr. T. Wells, of Foulbourn, for the present of a pretty little male merlin, which that gentleman shot at Foulbourn, in this county, on the 7th of November, 1861. This little fellow was, and had been, paying his respects to a number of larks, at which it was hawking when shot. It is a bird of the year.—*Id.*

Note on the Merlin.—Two pairs of the merlin, and no more than two, usually appear each spring to breed on our moors. What is remarkable, each successive year sees the several pairs occupying the same limited district of the moor for their several nests, and that although each of the four birds of the preceding year has been shot or otherwise destroyed. What is almost as remarkable, the spring of the present year saw no merlin on our moors at all. Both the breeding-places were quite tenantless. —*J. C. Atkinson ; Danby, Grosmont, York, December* 12, 1861.

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* 'Revue et Magasin de Zoologie,' Février, 1860, p. 64, pl. 2, fig. 4 (miscalled on plate "Bombycilla cærulea").

† Since the above was in type I have seen No. 1, for 1860, of the 'Bulletin de la Société Impériale des Naturalistes de Moscou,' which contains an interesting notice by Prof. Alex. v. Nordmann of the Birds of Finland, as observed by his son Arthur. It is therein mentioned (page 21) that the Helsingfors Museum contains five nests, with eggs, of the waxwing, and that "Studiosus Malmgren" had brought its young from Kajana.

Shorteared Owl and Roughlegged Buzzard near Bishop Stortford. — I beg to forward a note of two birds found on the estate of Mr. J. A. Houblon, and killed by one of the keepers, G. Lambert:—November 12th, a shorteared owl, in the stubble; November 18th, a roughlegged buzzard, which had been seen at times for a fortnight, but managed to escape the vigilance of the keepers until Monday last, when it was shot in Hatfield Forest: it measured 4 feet 4 inches from tip to tip, and 18 inches from beak to tail.—*T. Brunton ; Hallingbury Place, November* 21, 1861.

Note on the Food of the Kestrel. — My notice was drawn, a few minutes since, to Mr. Saxby's "Notes on the Food of Birds" (Zool. 7809), and in reference to the food of the kestrel I would willingly place on record a fact or two which have recently come to my knowledge, and which are inconsistent with all my former observations. I had held, on the presumption afforded by these observations, that the kestrel does not attack game, unless indeed a very "weak and infirm" and "unprotected" chick should present an utterly overpowering temptation. Stating my opinion, last spring, to a bird-loving and observing gentleman, he told me I was mistaken, for that such and such facts—the death of nearly-grown young partridges and the like, occurring within his own knowledge—were clearly against me. Later in the year I was talking to the "watcher" about his experience in hawk-slaughter this year, and I added my doubts as to the expediency of killing kestrels. "But, sir," he said, "they kill a vast of game." "Oh, no! surely not much: they are not strong enough or big enough." "Well, sir, I don't know how that may be; but I shot t' cock bird iv a nest i' t' crag, and he had t' fore-quarters iv a fine young moor bird in his claws; and what's more, I brought it home with me."—*J. C. Atkinson ; Danby, Grosmont, York.*

Scops Eared Owl (Strix Scops) *in Norfolk.* — On the 27th of November an adult male of this pretty little owl was picked up dead near the lighthouse at Cromer, against which it had apparently flown with great force, attracted by the glare of the lamps. The head exhibited no marks of injury, and the plumage was perfect, but the flesh on the breast and the point of one wing showed symptoms of having sustained a severe blow. The stomach contained a mass of fur, about the size of a walnut, amongst which was discernible an almost perfect skeleton of a mouse, together with the heads and forceps of several earwigs, and three stout caterpillars nearly an inch in length. This rare species has previously occurred in this county in three or four authentic instances, but not of late years. The present specimen is now in the collection of J. H. Gurney, Esq., M.P., of Catton Hall. —*H. Stevenson ; Norwich, December* 7, 1861.

Parrot Crossbill at Cheltenham. — This bird, the occurrence of which I noticed three years since in the pages of the 'Naturalist,' has again made its appearance in the neighbourhood of Cheltenham. Nathaniel Skelton, bird-preserver of that place, writes me word that he has taken three examples this autumn. — *W. V. Guise ; Elmore Court, December* 2, 1861.

Sand Martins' Nests in the Walls of an Old Priory.—A circumstance which I remember in connexion with Godstow is the fact that a colony of sand martins had —and probably still have—their nests in holes of the wall of the Old Priory, many of them entering from within the building, which of course is roofless. This is the only instance in which I have seen them frequenting a building. House martins, on the other hand, I have more than once found breeding at a distance from any human habitation, *e.g.*, on the chalk cliffs of the coast at Ramsgate and in a large stone quarry on the moor between Kirkby-in-Cleveland and Bilsdale.—*J. Dalton; Church Broughton.*

White Variety of the Blackheaded Bunting.—This unique albino was shot on Burwell Fen, in this county (Cambridgeshire), on the 3rd of October, 1861. It has passed from the hands of the man who shot it to those of Mr. F. Barlow, of Cambridge, in whose museum it forms a decided ornament. Its entire plumage is of an uniform white, with the slight exception of a few minute dashes of black, almost imperceptible unless closely inspected. The second quill in the tail is of the ordinary colour. Eyes light hazel; upper and lower mandibles light flesh-colour; tarsi, feet and toes whitish flesh-colour. I think I am not erring when I state that it is at least a decidedly rare occurrence to come across a variety in any form of the blackheaded species.—*S. P. Saville; Dover House, Cambridge.*

Occurrence of Shore Larks, Little Auks, Gray Phalarope, &c., in Norfolk.—During the last ten days three specimens of the shore lark have been killed on different parts of the coast, whilst hitherto only three other examples are known to have visited this county—one at Sherringham, in 1830; one at Yarmouth, in 1850; and one at Holkham, in 1855. Of these recent specimens the first was killed at Yarmouth, on the 7th of this month; the second at Sherringham, on the 9th; and the 3rd near Yarmouth, on the 12th. All three proved on dissection to be males, and are apparently adult birds in a state of change between the summer and winter plumage. The bands of black and yellow on the throat are very bright, more especially in the one from Sherringham, which has also a richer vinous tint on the wings, but in each the band on the crown of the head is but slightly traceable. As usual after such sudden and violent storms as have recently prevailed, many specimens of that irregular and probably most unwilling visitant to our shores, the little auk, have occurred in various parts of the county, in some instances driven far inland by the force of the gales. On Monday, the 12th, after the high wind of the previous night, one was shot near Yarmouth, one at Hevingham, another at Scotton, and a fourth in the river at Eaton, about a mile from this city, and upwards of twenty miles from the sea. I have since heard of one or two others which appeared about a fortnight previous, and this morning (Nov. 20th) I received two more from Salthouse, a village on the coast, probably killed yesterday, and was shown a third picked up near Norwich. All these birds exhibit more or less distinct traces of the black band on the throat peculiar to their summer plumage. A fine gray phalarope, in part change to winter plumage, was also sent me from Salthouse on the 9th, and an equally good specimen was killed in this county about the 17th. During the last two or three weeks an unusual number of great spotted woodpeckers have been killed in various parts of the county, and for the most part near the coast. One birdstuffer in Norwich has had six or seven, all young, from different localities; another man has had four, two old and two young birds. There can be but little doubt that these are migratory specimens from the north, though more numerous at the present time than in most seasons.—*H. Stevenson.*

Cuckoo's Egg in Reed Warbler's Nest.—The mention of cuckoos' eggs having been found in reed warblers' nests (Zool. 7818), reminds me that, in the spring of 1854, I saw two nests of the latter bird by the side of the river Isis above Godstow, each of which contained a cuckoo's egg in addition to its own. These nests were suspended in a large bed of nettles, and were within ten yards of each other. Both the cuckoo's eggs being unusually light-coloured, and exactly resembling each other, I conclude that they were laid by one bird. The stalks of the nettles were so slight as to render the manner in which the cuckoo's eggs had been placed in the nests a curious subject of speculation. It would appear, however, that the process is not attended with much difficulty, for had the parent birds in question preferred the nests of the sedge warbler they would have found abundance of them in the same locality, and these nests being placed on or close above the ground would have been easily accessible. I may mention that the reed warbler was very plentiful in the gardens of Worcester College, Oxford, where numerous nests were to be seen every year. These were built in various situations, but always resembled each other. I have seen them in the thorn hedge which divides the canal from the gardens, and lilac, Seringa, arbor-vitæ, box and laurel bushes were also selected.—*James Dalton; Church Broughton.*

Gathering of Magpies.—I see in the 'Zoologist' for December (Zool. 7817) one of your correspondents writes respecting magpies, he having seen a flock of twenty, and asks, "Is this a common occurrence?" I should say of very rare occurrence indeed, at least in this neighbourhood, although a few years ago, one fine sunny afternoon in October, I saw fifteen on the wing together: they rose in a very scattered manner from a stubble field on Throckley Fell, which is about four miles from this place. This is the greatest number I ever saw together: they assembled on the tops of two trees near at hand.—*Thomas Thompson; Winlaton, December* 7, 1861.

Gathering of Magpies.—Mrs. Battersby expresses surprise (Zool. 7817) at having seen an extraordinary gathering of magpies, some twenty or more, about 5 P. M., on the 29th of October, and asks whether such gathering is a common occurrence? I believe it is the usual habit of the magpie to congregate in flocks previously to their going to roost. I speak particularly of what I see take place in this parish, where I have repeatedly observed these birds to congregate about dusk in much greater numbers than flocks of twenty, previously to their coming into the woods to roost, on which occasions they are frequently and readily shot by persons who secrete themselves for that purpose under the trees the birds are about to occupy. I have often heard my late old woodman quote a saying of his father, who in his day was a woodman also, that "it was time to leave off work when the magpies come into the wood," *i.e.*, about dusk, which, as regards the hour of day, would very well correspond with Mrs. Battersby's 5 P. M., on the 29th of October. I well recollect to have once observed a really very extraordinary gathering of magpies, not for the purpose of going to roost, for it was in the morning before 11 o'clock. They occupied a considerable space in a high hedge and the trees therein, parallel to the turnpike road on which I was riding, and not more than fifty or sixty yards from it. Any attempt to count the birds would have been quite hopeless, but I speak well within compass when I say there must have been many hundreds. They kept hopping about and fluttering in the hedge, chattering in a very restless manner. What they might be about besides I cannot pretend to say. One might have thought it was the general assembly of all the magpies throughout the country convened on some special and important business. I speak of what I witnessed more than fifty years ago, but the fact is as vividly impressed on my memory as if it had happened only yesterday, and I can still point out the exact spot where it took place. I never saw the like before or since.—*W. T. Bree; Allesley Rectory, December* 11, 1861.

Great Spotted Woodpecker and Little Gull on the Norfolk Coast.—Since I sent off my notice about Norfolk rarities I have heard of more arrivals on the coast of great spotted woodpeckers. These occurred about the same time as those I have named—three at Wells, six at Lynn, and three at Wisbeach. A little gull (immature) was also shot at Lynn last week, and a Temminck's stint near Yarmouth.—*H. Stevenson; Norwich.*

Great Spotted Woodpecker, Little Auk and Crossbills in the Isle of Wight.—A fine male specimen of the spotted woodpecker was shot on Headon Hill, on the 8th of October: this is the second specimen that has been shot at Freshwater: the bird is only an occasional visitor with us. Two specimens of the little auk were also shot at Freshwater Bay, one by myself, the other by Mr. T. Murrow, of the Royal Albion Hotel. Several flocks of crossbills have been seen here within the last week, but I have not been fortunate enough to obtain a specimen yet.—*H. Rogers; Isle of Wight.*

Greater Spotted Woodpecker in Cambridgeshire.—This species has been unusually numerous this autumn, more particularly birds of the year. I should be glad to learn if this has been the case in any other neighbourhood.—*S. P. Saville; Dover House, Cambridge.*

Note on the possible Existence of a huge Bird allied to the Moa.—The following extract from the 'Nelson Examiner,' of June 12, 1861, will afford ground for much speculation on the possible existence of one of those gigantic birds of the southern hemisphere which all authorities have agreed in supposing to be extinct:—"About three weeks ago, while Mr. Brunner, chief surveyor of the province, and Mr. Maling, of the Survey Department, accompanied by a native, were engaged in surveying on the ranges between the Riwaka and Takaka valleys, they observed, one morning, on going to their work, the footprints of what appeared to be a large bird, whose tracks they followed for a short distance, but lost them at length among rocks and scrub. The size of the footprints, which were well defined wherever the ground was soft, was fourteen inches in length, with a spread of eleven inches at the points of the three toes. The footprints were about thirty inches apart. On examining the bones of the foot of a moa in the Museum, we find the toe to measure, without integuments, eight inches and a half, and these evidently form part of a skeleton of a very large bird: the length of the impression of the toe of the bird in question was ten inches. The native who was in company with Messrs. Brunner and Maling was utterly at a loss to conjecture what bird could have made such a footprint, as he had never seen anything of the kind before. On a subsequent morning similar marks were again seen, and, as a proof that they had been made during the night, it was observed that some of them covered the footprints of those the party made the preceding evening. The size of these footprints, and the great stride of the supposed bird, has led to a belief that a solitary moa may yet be in existence. The district is full of limestone caves of the same character as those in which such a quantity of moa bones were found, about two years ago, in the neighbouring district of Aorere. We believe it is the intention of the Government to take steps to ascertain the character of this gigantic bird, whether moa or not, which keeps watch in these solitudes." A tale has found some currency that huge apes have been seen in the interior of Australia, but this seems very apocryphal.—*Edward Newman.*

The Goosander and Spotted Rail in Leicestershire.—As ornithological events are unusual in Leicestershire, it may be worth while to record the goosander and the spotted rail, both of which were shot in this neighbourhood. The former, a very fine female, I shot as it was passing over my head by itself, near this place (Kibworth), on November 18th, during a hard frost. The spotted rail was killed a short distance from here, by my friend the Rev. A. Matthews, on the 9th of November.—*A. H. Hildebrand; Kibworth, Market Harborough.*

Note on the Goosander.—On Friday, the 6th of December, I walked along our "Beck" for some distance, for the chance of meeting with a duck or two. At a point not far distant from Viscount Downe's "shooting-box," Danby Lodge, I came quietly upon the bank of the river at a point at which I could command a sight of the water in both directions, at the same instant that I became visible myself to any occupant of the surface. As it happened, immediately below the small bush on the bank, which was immediately below me, was a "dun diver" who did not see me before I saw her. On catching sight of me, already as still as if a statue and not a man, she swam out into the stream quite deliberately, and moved on and on, down with the current, watching me as she went. Fearful she would dive if I moved hand or foot, I remained perfectly motionless until, at last, about fifteen to eighteen or twenty yards from me, she took wing; and then I shot her. On taking her from the water a good deal of coagulated blood issued from the throat, but nothing else. About an hour after, on removing her from my pocket, I felt some large substance in the gullet, and on extracting it it proved to be a trout of from 7 to 8 inches in length, which had been swallowed tail first,—at least it came up head first, and the last inch and half of the tail and body had a bend in it,—and which I believe had been taken the very instant previous to my appearance on the bank.—*J. C. Atkinson.*

Little Auk at Sudbury.—A little auk was brought to me this morning alive, having been picked up yesterday, in an exhausted state, about a mile from this town; probably it had been driven so far inland by the late severe storms. The bird has died in the course of the day, for want no doubt of its proper marine food, but is in good plumage for preserving.—*S. King; Sudbury, November* 18, 1861.

Occurrence of the Iceland Gull and Rednecked Grebe at Plymouth.—On the 27th of November, when walking through Plymouth after dark, my attention was attracted to some boys swinging about something, which, on nearer inspection, proved to be a gull, and which I immediately recognised to be an immature specimen of the Iceland or lesser whitewinged gull (*Larus leucopterus*). I, of course, at once secured it, and it is now in the hands of the birdstuffer. In October last a specimen of the red-necked grebe (*Podiceps rubricollis*) was obtained in the neighbourhood of Plymouth: of late years this species has become very rare.—*John Gatcombe; Wyndham Place, Plymouth, December* 16, 1861.

Chit-chat, chiefly Ornithological, from the Isle of Man.—The mole, the toad, the viper and the snake are unknown here, thanks to a pop visit from St. Patrick. Weasels are common, and hedgehogs abound now throughout the island, though quite a recent introduction, and, in spite of an increasing persecution waged against them by the natives, under the strange idea that poor piggie is "veminous!" The noble peregrine still breeds on Manghold Head, and even nearer home (I know one of his nurseries full well), as he did centuries ago, when a cast of hawks "from Ramsey Bay, in the Isle of Man," was reckoned no mean gift; witness Sir Walter in 'The Betrothed.' The raven, too, is far from scarce, and pert "mag" is everywhere. The song thrush and blackbird are abundant indeed, but the former almost entirely deserts us in winter, in company with the skylark; the blackbird remains lingering wistfully over the last of his darling blackberries, and consequently, in a severe winter like the last, endures such hunger-pains as force him, in spite of his innate misanthropy, to have recourse to the crumbs strewn for poor robin on our windowsills, whither his coming is presently made known throughout the house by the noisy strokes of his beak against the woodwork,—aye, and against the glass itself,—if his presence and his wants are inadvertently overlooked too long. Rock-pigeons haunt many of the caves around our coast; and the sweet "cushat" is "at home" wherever she can find trees enough to shelter her. The grouse has but recently become extinct on our hills, where the plover and the curlew still find some security in their comparative insignificance. The heron, here miscalled the crane, is a regular visitor. The little jack snipe is not nearly so common as is its larger brother. Woodcocks abound in a hard winter: they know full well how short and slight our frosts are, and never fail to remember "something" so much "to their advantage," the cunning long-bills! about the shortest day of last year it was no uncommon thing for a single gun to bag from six to ten couple. But decidedly the most prominent members of the ornithological *beau monde* here are the cuckoo and corn-crake, companions in arrival (they announced themselves respectively May 4th and 5th this year), they are mates both in song and in silence: "in song," I repeat, for songsters they both are right pleasant to my ear: how merrily their calls ring over our treeless hill-sides here all day, and all night too, where the "no real night" of the almanacs is a patent reality! The cuckoo may perhaps snatch a couple of hours' "snooze," but let the midnight hours be only calm and mild, and the corn-crake never closes an eye in sleep: the cuckoo loiters longest with us, haunting the sand-hills of the north far into the autumn months.—*Hugh A. Stowell; Christ Church, Maughold, Isle of Man, December* 12, 1861.

The Heart surviving the Body, and the Body surviving the Heart.—Dr. Harley, in his introductory address at University College, made some observations on these extraordinary subjects which seem to have excited general interest. Having been applied to by a naturalist to explain more fully and more publicly his views, Dr. Harley has supplied the following particulars, from which it appears that both the phenomena are brought about through the agency of poisons:—"The two poisons to which I alluded in my address at University College, which enable the physiologist to produce the wonderful sight of a dead body with a living heart, as well as of a dead heart in a living body, are curiously enough the preparations of savages in the opposite hemispheres of our globe, and are employed by them for similar purposes, namely, the making of poisoned arrows and other weapons. One of the poisons, woorara, is prepared and employed by the natives of Guiana, and is so powerful that it requires but a very small quantity to penetrate a wound in order to produce a fatal result. At one time, indeed, it was said to be destructive not only to animal but even to vegetable life, and that if a poisoned arrow chanced to penetrate the bark of a tree the tree soon drooped and died. Although this is a gross exaggeration of its poisonous properties, it is nevertheless true that it requires but a very small quantity of woorara to take away the life of an animal. I have myself seen a dog killed in the short space of sixty seconds, with somewhat less than a grain of the poison introduced into a vein. Woorara possesses some properties entirely distinct from any poisonous agent, if we except conia, the preparation of which is known to civilized man; for, notwithstanding its virulence, the physiologist has it in his power to administer it so as to paralyse the motor nerves, and render the limbs flaccid as in death without destroying the intelligence of the animal. Its action on the heart I have already alluded to, and I think that I cannot better explain the latter than by citing the following experiment: — A healthy and full-grown frog was pricked with the point of a poisoned arrow, and in the course of a few minutes its limbs gradually became paralysed. The paralysis soon extended itself over the body, the animal ceased to breathe, and in the course of a few minutes more was dead. On examining the heart about an hour afterwards, that organ however, and that organ alone, was found still alive. Death could not be said here to have usurped its power, for the heart slowly and regularly pulsated as in life. On the following day the heart still continued to beat, although the tissues surrounding it were already assuming the appearance of death. Forty-eight hours after the animal had been poisoned its heart still continued to act regularly, and even seventy-two hours after death the action of the ventricle and auricles, though feeble, was yet distinct. On the fourth day (ninety-six hours after death) part of the heart had died, the left auricle alone continued to pulsate; but now not only was the frog dead, but its lower limbs were already shrunk and withered. I now made an attempt at resuscitation, and exactly a hundred hours after the animal died I put it into a moist warm atmosphere, and there retained it till the temperature of its body was slightly raised. This treatment had the effect of restoring the irritability of the heart, and on touching the ventricle with the point of my pen it resumed its pulsations, and during several minutes the contractions, first of the auricles and then of the ventricle, continued rythmically; even the pulsations in the large vessels attached to the heart became distinctly visible, and continued with regularity for upwards of a quarter of an hour. Here, then, the origin of my remark, that we can have a living heart in a dead body. I may here mention, however, that the woorara used in the above case was half a century old. It appears, therefore, that this poison retains its tonic properties for a great length of time. For some of the specimens of woorara now in my possession I am indebted to the kindness of the celebrated traveller and naturalist Charles Waterton, Esq., of Walton Hall, who brought them with him from South America in 1812, and, although they are consequently half a century old, they still exert their poisonous effects in a remarkable manner. In a MS. article by Sir R. Schomburgk, kindly lent to me by the author, I find several facts related in corroboration of this point. I ought to add, however, that the poison does lose some of its active properties by prolonged exposure to the air. Now, as regards the substance with which we can produce the strange sight of a dead heart in a living body, it is the Upas antiar, a poison prepared by the natives of Borneo, for the same purposes as woorara; but curiously enough the physiological actions of these two poisons on the animal body are the reverse of each other; for the primary effect of the antiar is to paralyse, and consequently totally to suspend, the rythmical movements of the heart. The effect of the antiar is best seen on a cold-blooded animal, such as the frog. With a small piece of the poison introduced by a wound in the cuticle, it is very easy to exhibit the striking spectacle of a living animal leaping about with a perfectly dead heart; so that the story of a dead heart is not merely a stage fiction, but a scientific reality."—*Field Newspaper.*

The Sea Serpent.—Thursday, December 10. Off Madeira, on board R.M.S. "Thames." Made acquaintance with a Captain Christmas, of the Danish Navy, a proprietor in Santa Cruz, and holding some office about the Danish Court. He told me he once saw a sea serpent between Iceland and the Faroe Islands. He was lying to in a gale of wind, in a frigate of which he had the command, when an immense shoal of porpoises rushed by the ship, as if pursued, and lo and behold a creature with a neck moving like that of a swan, about the thickness of a man's waist, with a head like a horse, raised itself slowly and gracefully from the deep, and seeing the ship it immediately disappeared again, head foremost, like a duck diving. He saw it only for a few seconds; the part above water seemed about eighteen feet in length. He is a singularly intelligent man, and by no means one to allow his imagination to run away with him.—*Stephen Cave, M.P. for Shoreham; 35, Wilton Place, April* 29, 1861; *in a letter to Mr. Gosse.*

The Sea Serpent.—On a Sunday afternoon, in the middle of August, above a hundred persons, at that time in and about the hotel, were called on to observe an extraordinary appearance in the sea, at no great distance from the shore. Large shoals of small fish were rushing landwards in great commotion, leaping from the water, crowding on each other, and showing all the common symptoms of flight from the pursuit of some wicked enemy. I had already more than once remarked this appearance from the rocks, but in a minor degree; and on these occasions I could always distinguish the shark, whose ravages among the "manhaidens" was the cause of such alarm. But the particular case in question was far different from those. The pursuer of the fugitive shoals soon became visible; and that it was a huge marine monster, stretching to a length quite beyond the dimensions of an ordinary fish, was evident to all the observers. No one, in short, had any doubt as to its being the sea serpent, or one of the species to which the animal or animals so frequently before seen belonged. The distance at which this one was, for ten minutes or a quarter of an hour, visible, made it impossible to give a description of its apparent dimensions so accurate as to carry conviction to the sceptical. For us who witnessed it, it was enough to be convinced that the thing was a reality. But one of the spectators, Dr. Amos Binney, a gentleman of scientific attainments, drew up a minute account of it, which is deposited in the archives of one of the Philosophical Societies of Boston. I was and am quite satisfied that on this occasion I had a partial and indistinct but positive view of this celebrated nondescript; but had the least doubt rested on my mind it would have been entirely removed by the event of the day following the one just recorded. On that day, a little before noon, my wife was sitting, as was her wont, reading on the upper piazza of the hotel. She was alone. The gentlemen, including myself and my son, were, as usual, absent at Boston, and the ladies were scattered about in various directions. She was startled by a cry from the house of "The sea-serpent! the sea-serpent!" But this had been so frequent, by the way of joke, since the event of the preceding day, and was so like "The wolf! the wolf!" of the fable that it did not attract her particular attention for a moment or two, until she observed two women belonging to the family of the hotel keeper running along the piazza towards the corner nearest the sea, with wonder in their eyes, and the cry of "The serpent! the serpent! he is turning, he is turning!" spontaneously bursting from their lips. Then my wife did fix her looks in the direction they ran; and sure enough she saw, apparently quite close beyond the line formed by the rising ground above the rocks, a huge serpent, gliding gracefully through the waves, having evidently performed the action of turning round. In an instant it was in a straight line, moving rapidly on; and after coasting for a couple of minutes the north-west front of the hotel, and (as accurately as the astonished observer could calculate) looking as it stretched at full length about the length of the piazza,—that is to say, about ninety feet,—it sank quietly beneath the surface, and was seen no more. The person who was thus so lucky as to get this unobstructed view is one so little liable to be led astray by any imaginary impulse that I may reckon on her statement with entirely as much confidence as if my own eyes had demonstrated its truth.—*Grattan's 'Civilized America,'* p. 39.

Ommastrephes todarus, Delle Chiaje. — The violent gales of wind which prevailed about the middle of last month (November) may very possibly, amongst other waifs and strays, have thrown ashore many denizens of the deep, whose presence might have been worthy of record, had there been any one to "make a note of it when found." The squid whose technical name stands at the head of this notice was found, by a fisherman, thrown ashore at Stifkey, on the Norfolk coast, and, being strange to the finders, was carried about the country and exhibited as a "queer fish." I made a careful sketch of the animal, the occurrence of which may be worthy of notice, as it does not appear to be a common form of cephalopod. Being pressed for time, I requested a servant to measure it, forgetting to instruct him to make a separate measurement of the body and arms. The entire length was 2 feet 4 inches, of which I should judge that the body, from the beak to the tail, could not have been less than 18 inches.—*W. V. Guise; Elmore Court, December* 2, 1861.

Additions to Forbes' 'Malacologia Monensis.'—Two small species of fresh-water shells which abound here may be worth recording in the pages of the 'Zoologist;' the one, Ancylus fluviatilis, *Müll.*, solely on account of its being an addition to the list drawn up by the lamented Edward Forbes of the Mollusca of this his native isle, a synopsis of which will be found in Dr. Gray's edition of Turton (pp. 30 *et seq.*). It must surely have been omitted by mistake, since its absence from our clear stony rivulets would be more remarkable than is its presence. The other species, Pisidium obtusale, *Pfeiff.*, is noteworthy not merely as a novelty to the Manx Fauna,—no species of the genus being included in Forbes' list,—but also as a scarce or at least local species in the South of England, and which, so far as I am aware, has not yet been detected in any locality so far north. Clausilia bidens, *Müll.*, also omitted by Forbes, occurs on beeches at Ballaglass Glen in this parish. — *Hugh A. Stowell; Christ Church, Maughold, Isle of Man, December* 12, 1861.

Note on the Supposed British Specimen of Argynnis Aphrodite.—The proverb says "better late than never," so I am now going to point out an error into which you have inadvertently fallen so long ago as the date of your excellent 'Natural History of all the British Butterflies,' which I can truly say is worth ten times the money it costs; and I feel the more bound to do so, inasmuch as I have been the innocent cause of misleading you. Under the head of Argynnis Aphrodite (p. 18), after stating that it was described as British by me in Mag. Nat. Hist., you go on to say, "I had an opportunity of examining the very specimen described by Mr. Bree," &c., and that "the mode of setting and the pin were identical" with other specimens in your possession, taken by the late Edward Doubleday in North Carolina. Now this is altogether erroneous; for I beg to assure you that you never have seen the specimen described by me, and that the mode of setting and the pin are not foreign. The real fact is this. When the specimen came into my (*i. e.* my son's) possession, being ignorant of the names of foreign butterflies, and wishing to know the name of the one in question, with a view to record the capture in Mag. Nat. Hist., I resolved to apply to you for assistance, but I did not like to run the risk of sending Mr. Walhouse's example on a journey, so I procured an avowedly foreign, and that a very miserable but unquestionably identical, specimen for that purpose, and this foreign specimen was the one you saw and not Mr. Walhouse's, the one described by me. I am a great stickler for exact truth in all matters relating to Natural History, and should your most useful article ever be reprinted I hope you will correct the mistake or at least omit the erroneous statement. I will not quarrel with you for excluding A. Aphrodite from the British list. The recorded capture of a single specimen of a North American insect in England is scarcely sufficient to establish its claim as British; and as to the fact of its having been taken in Ufton Wood, that is a point which does not rest on my shoulders, but solely on the authority of the Messrs. Walhouse.—*W. T. Bree; Allesley Rectory, December* 12, 1861.

[From this it would certainly appear that the actual specimen of A. Aphrodite submitted to me to name, and figured in the 'Magazine of Natural History,' was not taken in Great Britain at all, but was an "undoubtedly foreign one." I think this ought to have been specified at the time, because I now presume that no competent authority has pronounced on Mr. Walhouse's specimen, and consequently it falls to the ground as a specimen of A. Aphrodite at all. The 'History of Butterflies' *has* been reprinted with several valuable additions and corrections by Messrs. Doubleday and Bond.—*Edward Newman.*]

Occurrence of Glæa erythrocephala near Newark.—I captured a very fine example of Cerastis erythrocephala at sugar, on the 28th of October, in company with S. satellitia. Although I visited the same locality several previous and subsequent evenings I was not successful in meeting with more.—*W. P. Hatfield; Newark, December* 21, 1861.

Note on Pionea forficalis.—The larvæ of this common garden pest answer, if I mistake not, a query of Professor Westwood's, which appeared in the 'Entomologist's Weekly Intelligencer' (vol. i. p. 104), and ran as follows:—"Now that green peas are coming in, it will be useful to examine the pods of any which have a suspicious appearance, as they enclose the larva of a lepidopterous insect, which gnaws the pea inside. If any of your subscribers should be so fortunate (?) as to find this larva I should be very much obliged to them for a specimen, as well as for the name of the perfect insect." To this question there appeared no reply at the time, and probably most who read it concluded at once that it referred to an Endopisa. However, two years ago last spring my peas had the good fortune (?) to yield a large supply of these interesting creatures: from them I bred a host of Pionea forficalis, but having unfortunately forgotten the Professor's duplicate request I can now only supply the latter half of it.—*Hugh A. Stowell; Christ Church, Maughold, Isle of Man, December* 12, 1861.

Anthribus albinus and other Coleoptera at Folkstone.—I was fortunate enough to obtain a specimen of Anthribus albinus during my stay at Folkstone this year. It was found on some rotten stumps of trees in a field near Sugar-loaf Hill. The habits of this insect seem peculiar, and its extreme sensitiveness to touch is remarkable. From its strong resemblance to the colour of decayed wood it is difficult to find, and would be passed over by any but entomological eyes. The season just closed was certainly not favourable to insect life, and species common at Folkstone in former years were with difficulty to be met with. Among other more abundant species I obtained the

following:—Pterostichus ruficollis, Stenolophus luridus, Ocypus pedator, Aphodius porcus, Apion subulatum, A. vorax, A. Waltoni, A. flavimanum, A. difforme, Plinthus caliginosus, Orchestes pratensis, Psaridius picicornis, Rhinoncus subfasciatus, Cæliodes guttula, Chrysomela Banksii, C. varians and C. Graminis.—*Horace Francis*; 38, *Bedford Place*, *November* 21, 1861.

Note on Hylurgus piniperda.—When on a visit in the neighburhood of Swaffham, Norfolk, in the month of October last, I was informed that about two years ago great injury had been done to some young plantations of Scotch fir by the ravages of a small insect which mined the tender shoots of the plants. Upon examination evidence was not wanting that the mischief was still in progress, as here and there it was observable that the terminal shoots were bent downwards and looked sickly, or were altogether brown and withered. Upon examination a small round hole was perceptible, which being followed up showed the interior of the shoot entirely mined, and all the soft parts of the wood eaten away. At the end of the gallery thus formed the little excavators were for the most part found, which proved to be Hylurgus piniperda, *Linn.* Curtis gives an admirable figure of this insect, with a short account of its mode of working, accompanied by illustrations.—*W. V. Guise*; *Elmore Court*, *December* 2, 1861.

Capture of Euthia plicata of Gyllenhal in Britain.—During the month of September last we found in our garden, beneath a decaying bone, a beetle of small size, which we at once saw was new to our Coleoptorological experience. Mr. F. Smith has kindly compared it with specimens of the Euthia plicata of Gyllenhal in the Continental collection at the British Museum, and both he and we are satisfied that it is identical with that species.—*D. & H. M. Moses*; *Stockwell.*

Capture of Stenolophus derelictus of Dawson on Wimbledon Common.—In August we had the good fortune to capture a specimen of this insect on Wimbledon Common, most probably on the same spot on which Messrs. Solomon found a specimen recorded in a previous number of the 'Zoologist.'—*Id.*

Capture of Helophorus intermedius of Mulsant near Dover.—We met with this species, a late addition to the British Fauna, by the side of a pond in the vicinity of Dover, during a short visit to that town.—*Id.*

Prolegs identical with Thoracic or True Legs.—In my description of the larva of Cidaria dotata (Zool. 7822) the term "prolegs" means the "six thoracic legs." I was under the impression that "prolegs" and "posterior legs" were well understood terms for the six anterior and four anal legs of the larvæ of the Geometrina.—*Percy C. Wormald*, 10, *Priory Road*, *Kilburn*, *November* 30, 1861.

[This is doubtless the proper application of the term, although the late lamented Mr. Kirby applied it to the claspers, and has been followed by Mr. Westwood in this unfortunate error. The term had better be discontinued, since it can never be used without an explanation.—*E. N.*]

Hymenoptera and Diptera desired. — I am now rearranging the British Hymenoptera and Diptera in the cabinets of the Entomological Club, with a view to rendering them more useful to my Thursday evening visitors; and I shall feel sincerely obliged to gentlemen who will contribute specimens of these unfashionable and much neglected insects: almost every entomologist takes them, but leaves them without any attempt at arrangement: the species of Sirex, Cimbex, Allantus, Tabanus, Stratiomys and Anthrax will be particularly acceptable. — *Edward Newman*; 9, *Devonshire Street*, *Bishopsgate*, *London*, *N.E.*

Life-Histories of Sawflies, Translated from the Dutch of M. Snellen Van Vollenhoven. By J. W. MAY, Esq.

(Continued from p. 7724.)

NEMATUS VALLATOR, *V. Voll.*

Larva and imago both undescribed.

Nematus niger, nitidus, antennis crassioribus, pedibus rufo-flavis, tibiis posterioribus dimidiato albis nigrisque.

The insect which I am now about to describe belongs undoubtedly to the genus Nematus, although possessing two peculiarities in the direction of the genus Cladius; thus the antennæ, especially in the male, are vertically incrassated, and the terminations of the joints form somewhat hook-shaped projections, as shown at fig. 5; on the other hand, the second recurrent nervure is not exactly received by the second submarginal cell, but, in the male, by the nervure between the second and third submarginal. Nematus vallator is, however, far more remarkable by its habits and economy than on account of any structural peculiarities, its habits being so singular that I have found nothing similar in the history of any other insect.

In the garden at the back of my house stands an Italian poplar which has been planted about ten years, and on one occasion, in the month of May, looking among the foliage in search of any insects which might be little known or entirely unknown to me, I was surprised to perceive some little white projecting points round the holes which had been eaten in the centre of some of the leaves; these projections appeared erected on the surface of the leaf. I could not at that moment detect any animal to which I could attribute this structure; but my curiosity was aroused, and I resolved to watch the tree in question. It was not long before I discovered the origin of the white plantation. I found in some of the holes in the leaves a number of little saw-fly larvæ with the palisades surrounding the holes; I placed these larvæ in a glass. The following day I found new erections on fresh leaves which I had put into the glass, and on taking another look at my poplar, in the evening, I saw two larvæ at work making this singular fortification.

When the palisade larva, if I may so call it, has selected a leaf which it intends to feed upon, it turns round so soon as it has got on to the leaf-stalk, and then, with its body on the leaf, and its head and two or three anterior segments on the leaf-stalk, it makes a sort of *chevaux de frise*, consisting of ten or twelve little posts formed of dried secretion: beginning at the stalk, it emits a little of the secretion from the mouth, and raises its head to a certain height, whereupon the fluid immediately dries (see fig. 1, *f*). Under the microscope the palisades appear as if formed of dried bubbles or little bladders, and are highly iridescent, as I have endeavoured to represent in fig. 2. When the larva has covered the leaf-stalk, it turns round again, creeps further on to the leaf, and raises a whole row of similar little posts, placed quite close to each other, so that it is entirely surrounded by them (fig. 1, *c*). In the open space inside this rampart, it bites a hole in the leaf and begins to feed, as shown in fig. 1 *a*. When the hole becomes very large, the larva erects its fortification on both sides of the leaf. I have observed that in feeding it consumes its palisades, and I have once seen a larva first eat up its old defences, and immediately erect new ones enclosing a larger area.

With regard to the object of this singular operation, it can only, I think, be as a means of defence against the attack of apterous Hymenoptera, such as ants, or parasites of the genus Pezomachus. I have never seen any other insect on a leaf which was occupied by a larva of Nematus vallator.

This larva is in no wise remarkable either for form or colour. Like other Nemati, it has twenty legs, of which the anterior six are longer than the rest and provided with claws. The fourth and eleventh segments are apodal. The head round, but depressed anteriorly, pale green, with two brownish green stripes running obliquely across the vertex; trophi pale brown; the eyes seated in round black spots. The general colour of the body is pale green, clothed, as it were, with brownish granules, more particularly on the sides above the legs and round the spiracles. The legs are green, somewhat darker at the joints. The caterpillar appears never to stretch itself at full length, but is usually in the position shown at fig. 3. I have also never seen it elevate the abdomen in the air, as is continually done by some others of the genus, for example N. septentrionalis. The larva attains a length of 6 lines.

This species remains in the larval state about four weeks. Those larvæ which I had placed in glasses, for the purpose of rearing, hid themselves in the earth on the 26th and 27th of June. I had, however, already missed other larvæ from the tree, and these I must regard as full-grown; so that all the eggs were not laid in one week. On the 29th of June I observed another individual spin up in the folds of a withered leaf, from which it appears that they do not all bury themselves in the ground for the purpose of passing the pupa state. The cocoon was pale yellow. The first imago appeared, with me, on the 5th of the following July, the rest following shortly afterwards. In the works on Hymenoptera to which I had access I was unable to find any description applicable to my insect; I was thus obliged to describe it as a new species, and the singular method of defence adopted by the larva readily supplied me with a specific name. This species is most nearly allied to Nematus crassicornis, *Hart.*, described by Hartig, at page 204, of his Blatt und Holzwespen, which insect also has broad, or, rather, deep antennæ, similar to those of N. vallator. The ground colour of this last is black, shining; head and thorax punctate, and thickly clothed with short brown hairs. The antennæ are vertically incrassated from the third joint, more especially in the male, and the terminations of the joints on the under side project like the teeth of a saw, as shown, although not sufficiently marked, at fig. 5. The antennæ are black; in those of the male insect a red tinge is observable on the outside. The compound eyes are rather large, spherical, black. Tegulæ white or reddish white. Legs yellowish red; femora darker; tarsi paler; the posterior legs have the tibiæ red for one-eighth of their length, counting from the base,—then half white and the remainder black; the posterior tarsi are pale gray. My imagos were somewhat longer than 3 lines (7 mm.), expanding to 6 lines (14 mm.)

The saw of the female is represented at fig. 6.

I have not as yet been able to learn anything respecting the eggs or manner of ovipositing. I have also failed in rearing any parasites from this species.

Note.—Since the above was written in the original, I have received a letter from the author, in which he says, "This larva has since been found on other poplars in Leyden, and also at Utrecht; with me it has appeared annually in considerable numbers." He also informs me that the eggs of Nematus vallator are found inserted into the under side of the midrib of a leaf, two, three and four together; and that on the 20th of July, 1861, he found some larvæ just hatched, and at the same time he observed the marks left by the eggs.—*J. W. M.*

Notes on the Sea Anemones of the Mersey and Dee.—[Addressed by Dr. Cuthbert Collingwood to P. H. Gosse, Esq., and communicated by the latter.]

Plumose Anemone (*Actinoloba Dianthus*). The locality chosen by your correspondent is a strange one, "Liverpool, under the pontoons of the landing-stage." It is possible it may have been found there, but no one would think of going there to look for it; but higher up the river, on the Dingle Rocks, they occur in abundance,—

nearly all pure white,—just under the ledges of the rocks at low-water mark. On the other side of the river, at the slip or pier to which the railway ferry-steamer plies, they are numerous, but here they are not only white, but often of a fine deep buff colour: this, moreover, is one of the dirtiest parts of the river, and they are seen sticking to the side of the slip, at and above low-water mark. The white variety is also rarely taken at New Brighton. In the Dee, however, both white and buff varieties of great size are met with on Hilbre Island, the only rocky part of the Dee Estuary,—not the "Mersey Estuary," as at p. 23 (Act. Brit.), and again at p. 104.

Sagartia miniata. Tolerably abundant at Hilbre Island, where it fringes the under ledges of the rocks, just above low-water mark, in hanging festoons.

Sagartia Troglodytes. This is one of our most common species. I doubt if any are found at Birkenhead now; but lower down the river, at Egremont,—at the mouth of the river, off New Brighton,—and between the estuaries of the Mersey and Dee, at Leasowe,—they are numerous. I have never calculated how many of the *α* to *χ* varieties we possess, but they are not few, *θ* (*Aurora*) perhaps being the most frequently met with. The same may be said of the west side of Hilbre Island.

Sagartia viduata. This, next to Actinia Mesembryanthemum, is our rarest anemone, but may generally be found at Hilbre Island,—not, however, in the Mersey.

Actinia Mesembryanthemum. I consider it as not a little remarkable that this anemone should be so rare with us—perhaps more so than if it were altogether absent. Mr. Price once took one somewhere on our shore, and in 1854 several were taken at Hilbre; but, although a shore-hunter of some years' standing now, I have never found it, nor am I aware of any being found since I came to Liverpool. You remark (Act. Brit. p. 181), on the authority of Mr. E. L. Williams, that the Mersey estuary is the only place on our coast in which he has not taken this species, which he attributes to the foulness of the water. Now in this I cannot agree. If it were merely the foulness of the water, why should we find Actinoloba Dianthus in profusion, both opposite the landing-stage and higher up the river? Moreover, those delicate and beautiful animals, the nudibranchiate Mollusca, are in great numbers and variety all along the shore, and one would certainly imagine that foul water sufficient to offend the "Mes." would altogether extinguish them. You go on to say, "In the neighbouring estuary of the Dee the former (Mes.) is common, as usual." This, however, is a mistake. As I observed before, the estuary of the Dee offers but small space for such animals to flourish, and although the little rocky island of Hilbre is amazingly rich for its size (see 'Annals,' Sept. 1860), nevertheless the "Mes." is not among its riches, its occurrence there being a rarity. In fact, points of geographical distribution, such as this, cannot be referred to any single condition, such as the foulness of the water, but are among the most obscure questions in Natural History, like the range of the nightingale in England. Why, too, should we have in the Mersey a Dorid, Doris proxima (and also in the Dee), which seems to occur nowhere else? and why should Doris aspera, its close ally, be absent here? Why should a little rock-pool at Hilbre Island be the only known habitat in the wide world for Antiopa hyalina? not once taken by chance, but three times at intervals of three or four years?

Tealia crassicornis. This, which, before the appearance of your book, we always called "coriacea," is our abundant sea-anemone. New Brighton in the Mersey, and Hilbre Island, in the Dee, are the two great colonies of it, and here it attains a size and colouring which are truly magnificent. One cannot walk upon the rocks without stepping upon them, when out flies a jet of water to the distance of several feet. When considering the abundance of this species I am the more struck by the absence of Mesembryanthemum, unless indeed that law which seems to obtain in some kingdoms of Nature should hold here, *viz.* that the stronger of two nearly allied species should prevail over the other, until it became dominant and absolutely excluded it.

The only other anemone we possess is Sagartia sphyrodeta, of which I have nothing to advance, save that it inhabits Hilbre Island in numbers which place it for frequency bet een S. miniata and S. viduata.

But anemones are not our strong point; indeed in species we are poor, possessing only seven out of seventy-five British species, or one-eleventh, while of Nudibranchiata we have twenty-eight out of one hundred, or more than one-fourth.—*C. C.*

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

November 4, 1861.—J. W. DOUGLAS, Esq., President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be presented to the donors:—'Proceedings of the Royal Society,' Vol. xi.; presented by the Society. 'The Zoologist' for November; by the Editor. 'Notice of Blackwall's Spiders of Great Britain and Ireland;' 'On the recent Geologico-Archæological Researches in Denmark;' by John Lubbock, Esq., F.R.S.; by the Author. 'Journal of the Proceedings of the Linnean Society,' Vol. xi. No. 21; by the Society. 'The Journal of the Society of Arts' for October; by the Society. 'The Athenæum' for September and October; by the Editor. 'The Entomologist's Weekly Intelligencer,' Vol. x.; by H. T. Stainton, Esq. 'Catalogue Méthodique des Lépidoptères d'Europe pouvant être employé comme Etiquettes pour le Classement des Collections;' by M. Deyrolle.

Election of a Member.

Sighor Antonio de Lacerda, of Bahia, Brazil, was elected a Member of the Society.

Exhibitions.

Mr. Kirby exhibited a large number of North American Lepidoptera, and remarked on the close resemblance between many of the species and those found in Europe.

Mr. M'Lachlan exhibited a female variety of Colias Edusa, destitute of the usual orange spots in the dark border of the wings.

Mr. Stevens exhibited a box of insects collected in Japan by Mr. Fortune, and observed it was the first collection from that country he had had the pleasure of exhibiting; it contained fine examples of the rare and singular Damaster Blaptoides, and numerous other interesting Coleoptera, as well as two apparently new species of Papilio.

Mr. Reading exhibited specimens of Leucania putrescens taken at Torquay by Mr. King, and some rare Lepidoptera from South Devon, including Diasemia literalis, Heliothis peltigera, &c.

Mr. Reading also exhibited varieties of Pontia Napi, Colias Edusa (*var.* Helice), and a singular variety of Arctia villica, having the anterior wings entirely dark brown, the posterior pair being of the usual colour.

Dr. Knaggs exhibited a case of remarkable form, from Australia, believed to be that of a species of Psyche.

Mr. Miller exhibited some living larvæ of a species of Incurvaria found feeding on fallen leaves.

Mr. Adam White exhibited some insects, of various orders, collected by F. M. Rayner, Esq., Surgeon of H.M.S. 'Herald,' during its voyage of exploration in the South Seas. He especially noticed some from Aneiteum, New Hebrides, such as that interesting Longicorn, Psalidocoptus scaber. He showed other Longicorns from these islands, and the Pyrrha Wollastoni, from Lord Howe's Island, close to the genus Deucalion of Wollaston; Elytruri; Phasmidæ, such as Eurycantha australis, with its strange thickened hind femora and somewhat mole-cricket aspect, suggested ideas of analogy, now, since W. Sharpe Macleay had ceased to write, unfortunately little heeded by naturalists. Mr. White considered these ideas, if developed by their illustrious author in a republication of his works with annotations, as likely to prevent the dangerous theories of Lamarck and his pupil, Charles Darwin, from ever affecting, except in a sanatory way, " our little systems," which " have their day and cease to be." He said a few words on his good friend Mr. Rayner's admirable collections of Crustacea, and expressed a hope that the Government would grant a sufficient sum to publish the valuable 'Natural History of the Voyage of H.M.S. Herald,' begun by John M'Gillivray, and carried on so successfully by Messrs. Rayner and Dr. Macdonald.

Mr. White also exhibited a beautiful Bombyx, allied to the Bombyx Certhia, *Fabr.*, figured by Petiver. This new species was brought from India, by General Sir John Hearsey, K.C.B., and for which he proposed the name of Brahmæa Hearseyi. It is smaller than the Brahmæa Wallichii, *Gray* (Bombyx spectabilis, *Hope*), and has three or four irregular undulating white lines in the apex of the fore wing, instead of three longitudinal lines of angled white Vs: he pointed out the black band behind this space being curved outwardly, instead of angled and irregular as in B. Wallichii.

Mr. White also exhibited a fine species of Phryganidæ, also brought from Northern India by Sir John Hearsay, with yellowish brown upper wings richly and thickly spotted and blotched with black; the lower wings black, with purple tinge, and a broad yellow band before the tip, widest on the fore part. He named it Holostomis M'Lachlani, in compliment to a gentleman who had done, and would yet, if he lived, do much to advance our knowledge of Trichoptera, and neuropterous insects in general.

Mr. White also exhibited the male and female of a beautiful Lycæna from New Zealand. It was allied to L. Sallustius, *Fabr.* (the L. Edna of Doubleday). The male of this lovely Lycæna is suffused with purple-violet, and has a row of red spots on both wings, and black marks and spots; the under side is *quiet* brown and gray. The female is larger, and has only a line of purple behind the tip of fore wings and parallel with its margin, and a macular line of violet on lower wings. Mr. White proposed for it the name Lycæna Boldenarum, after Helen and Frances Mary Bolden, the former for eighteen years his devoted wife, the latter for the last three years the wife of T. Corbet de Lacy, Esq., of Dunedin, in New Zealand. The last three exhibitions are of insects to be figured and described in the 'Proceedings of the Zoological Society.'

Mr. Waterhouse exhibited three species of Curculionidæ from Australia, and laid descriptions of them before the Meeting. The first he supposed to be the Strongylorhinus ochraceus of Schönherr; and the remaining two he regarded as members of a new genus, very closely allied to Strongylorhinus, but differing chiefly in having the rostrum curved, in the antennæ having the seventh joint of the funiculus confounded with the club-joints, in the second joint being short, and lastly, in the total absence of claw-joints to the tarsi. To this genus the name Atelicus was applied. The two species received the names A. inæqualis and A. ferrugineus.

A. inæqualis is described as being 5½ lines in length, oblong, and of a pitchy black colour, but densely clothed with scales, partly of an ochraceous colour, and partly dark brown, giving a variegated appearance to the upper parts of the body. Thorax with the sides but gently rounded, the fore part constricted, the surface uneven and punctured; elytra striato-punctate, the alternate interstices unequally raised, and having four tubercles in a transverse line towards the apex. It is from Tasmania.

The second species, A. ferrugineus, is from Adelaide. Its length is 2¾ lines. In size and form it nearly resembles the small European insect known as Lixus rufitarsis of Schönherr: in colour it is of a somewhat deeper red than the Apion frumentarium: the head, rostrum, sides and under parts of the thorax clothed with yellow scales; a small spot at the humeral angle of the elytra, and a ring at the apex of each elytron are also formed by yellow scales: head and thorax with scattered punctures; elytra striato-punctate, and with the interstices flat.

Mr. Janson exhibited specimens of the following Coleoptera, brought by him before the Society on previous occasions under the names of Homalota subterranea and Haploglossa rufipennis, and made the following observations respecting them:—

"Homalota subterranea, *Muls.* This appears to coincide, as Mr. Waterhouse states, with an insect in the European Collection at the British Museum furnished by Dr. Kraatz, under the appellation of Homalota scapularis, *Sahlberg.* I had, however, prior to bringing the subject under the notice of the Society, carefully compared my specimen with the descriptions both of Sahlberg and Kraatz, and found disparities which precluded me from referring it to that species: thus, Sahlberg (Insecta Fennica, 372, 50) described his Aleochara scapularis as being 'barely one line long,' and as having the 'abdomen shining, scarcely punctulate,' and the characters attributed by Kraatz (Naturgesch. d. Ins. Deutschl. ii. 291, 100) are not in accordance with those presented by my example; finally, my specimen appeared to me to coincide well with both Mulsant's and Kraatz's descriptions of H. subterranea, and furthermore its occurrence in a nest of Formica flava led me unhesitatingly to refer it to that species: if, however, an insect received at the British Museum from Dr. Kraatz as the Homalota subterranea of Mulsant is really the species described by that author, it is not only specifically distinct from the insect to which I had applied that name, but pertains to a different section of the genus.

"Haploglossa rufipennis is not the species so designated by Kraatz, as I have convinced myself by a comparison with examples sent by him to the British Museum, but is perfectly distinct from an insect which I regard as the true H. pulla of Gyllenhal, being less coarsely punctate, having the antennæ conspicuously stouter, their articulations otherwise proportionate, &c., &c. The following synonymy of the two species will probably prove correct:—

"1. Haploglossa pulla, *Gyll.*

Aleochara pulla, *Gyll. Ins. Suec.* iv. 495, 56—57 (1827). *Fairm. et Laboulb. Faune Ent. Franç. Coleopt.* i. 451, 27 (1856)—but *not* of Kraatz or Waterhouse.

"2. Haploglossa nidicola, *Fairmaire.*

Aleochara nidicola, *Fairm. et Laboulb. Faune Ent. Franç. Coleopt.* i. 451, 28 (1856).

Haploglossa rufipennis, *Janson, Proc. Ent. Soc., Feb.* 6, 1860, *Zool.* 6957 (1860)—*nec* Kraatz.

Haploglossa pulla, *Kraatz, Naturgesch. d. Ins. Deutschl.* ii. 80, 2 (1856). *Waterhouse, Cat. Brit. Col.*—but *not* of Gyllenhal.

"The first is said by Gyllenhal to inhabit Fungi: the only indigenous specimen which I have seen, the one now exhibited, was given me by Mr. H. S. Gorham, who captured it in the Isle of Wight, he thinks, in an ant's nest beneath a stone, and who, I believe, has other examples.

"The second, M. Fairmaire informs us (*l. c.*), he found abundantly in the nests of the sand martin at St. Valery-s.-Somme, and I have myself met with it crawling upon and at the base of sand banks inhabited by these birds, and have watched the beetles ascend the almost perpendicular walls of sand and enter the burrows in which nests were situate. Mr. May found it copiously in flowers, and I have several times taken it in those of the ragwort (*Senecio Jacobæa*)."

Mr. Tegetmeier called the attention of the meeting to a theory propounded by Principal Leitch to account for the development of a fertile queen-bee from an egg which would, under ordinary circumstances, have produced a sterile worker.

It is well known that bees deprived of their queen select several workers' eggs or very young larvæ for the purpose of rearing queens. The cells in which these eggs are situated are lengthened out and the end turned downwards. The larva undergoes its development in this perpendicular cell, which is capable of being entirely surrounded by the worker bees. It was found by experiment that the position of the cell was not of importance, as a fertile queen was developed with equal certainty when the cell was placed horizontally or even inverted, as when it remained in the natural pendent position. It was suggested that the more perfect development of the fertile larva was due to increased temperature, and that the object of the isolation of the cell was to allow its being entirely surrounded by a cluster of bees, whose rapid and increased respiration was productive of the warmth necessary to accomplish the growth of a queen.

In remarking on this theory, Mr. Tegetmeier stated that the idea of the development of a queen being dependent on the use of a food known as "royal jelly" appeared destitute of any foundation in fact, and that the theory which attributed the change to increased temperature produced by the clustering bees appeared supported by the fact that in rearing queens artificially several queen cells were usually situated closely together, and also that the production of fertile workers, which occasionally took place under these circumstances, might be regarded as dependent on the adjacent cells being subjected to a somewhat increased temperature by the clustering of the bees around the royal cells. He further stated that it had been ascertained by the use of delicate thermometers that a higher temperature existed in the neighbourhood of the queens than was found in any other part of the brood-comb.

Mr. M'Lachlan exhibited a fine series of Phryganidæ pertaining to the genus Stenophylax of Kolenati, and read descriptions of all the known British species, amongst which were two not hitherto recorded as natives of this country.

Mr. Adam White called attention to the injury caused to ginger root brought to this country from Cochin and Calicut by the larva of a small coleopterous insect, believed to be Lasioderma testaceum, *Steph.*; and to the damage done to macaroni by the rice weevil (*Sitophylus Oryzæ*). The depreciation of the crop of ginger root in value is computed at £3000 or £4000 annually; and a large consignment of macaroni from Genoa, which cost 5*d.* per lb., would, in its now damaged state, be gladly disposed of by its unfortunate owner for 1½*d.* per lb.

Mr. Desvignes communicated descriptions of two new species of Ichneumonidæ, pertaining to the genus Ephialtes.

Part 10, completing the fifth volume of the new series of the Society's 'Transactions' was on the table.

December 2, 1861.—J. W. Douglas, Esq., President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be presented to the donors:—'Notice of some North-American Species of Pieris,' by Samuel Scudder, from the Proceedings of the Boston Society of Natural History, September, 1861; presented by the Author. 'The Journal of the Society of Arts' for November; by the Society. 'The Zoologist' for December; by the Editor. 'Stettiner Entomologische Zeitung,' 1861, Nos. 10—12; by the Entomological Society of Stettin.

Election of Subscribers.

James Fenn, Esq., of Clyde Villa, Lee; Charles Fenn, Esq., Clyde Villa, Lee; and Frank O. Ruspini, Esq., 85, Oakley Street, Chelsea, were balloted for and elected Subscribers to the Society.

Exhibitions.

Mr. Stevens exhibited a box of splendid Lepidoptera, sent by Mr. Wallace from Mysol, near New Guinea: the species were very similar to those previously sent home by Mr. Wallace from New Guinea and other adjoining islands. Mr. Stevens announced that Mr. Wallace was now at Batavia, and would probably return to England in the spring of next year.

Mr. Barnaud exhibited an extensive series of Coleoptera from Smyrna.

Mr. Machin exhibited specimens of a Gelechia, and also of a Tinea, which he was unable to refer to any known British species; and an example of Æthia emortualis, *W. V.*, taken near Loughton, in Essex: this species has been erroneously recorded as a native of Britain by Haworth and subsequent authors; but the only authentic indigenous example known, with the exception of the one now exhibited, was captured by the Rev. H. Birks, of Henley-on-Thames.

Mr. D'Urban exhibited a large collection of South African Lepidoptera, including several new species of the genus Acræa, &c.

Mr. Adam White exhibited drawings, by Mr. Robinson, of a species of Mantispa, bred in some numbers from a nest of Polybia scutellaris, *Saussure* (Myrapetra scutellaris, *White*), a wasp said to collect honey; this fine nest was brought from Monte Video: of the economy of the Mantispa nothing is yet known.

Mr. White called attention to a remarkable beetle of the family Buprestidæ in the collection of Mr. Jeakes: it is near Anthraxia, having the epistome projecting and developed into two marked horns—a character quite novel in this family of Coleoptera. Length about 2½ lines. For the reception of this insect, which is from Santarem, Mr. White proposed to found a new genus, and dedicate it to the gentleman in whose collection it is contained.

Mr. S. Stevens exhibited a specimen of Adelops Wollastoni, *Janson*, found by Mr. John Stevens, under dead leaves in a market garden at Hammersmith.

Professor Westwood observed that Hammersmith appeared to be a far richer entomological locality than the neighbourhood of Oxford; since his removal from the former to the latter place he had captured very few insects.

Mr. Waterhouse exhibited a specimen of Ishnoglossa corticina, a species hitherto unrecorded as British, which he had detected in the collection of the late Mr. Heysham, of Carlisle.

Mr. Waterhouse also communicated some notes on the British species of the genus Gyrophæna, including two species not yet indicated as indigenous, *viz.* G. lævipennis, *Kraatz*, and G. maura, *Erich.*: he stated that both these species appear to be not uncommon in this country, and Mr. Janson observed that he also had recently recognised them in his own indigenous collection.

Dr. Wallace read a letter from Captain W. T. Russell, of Monk's Sleigh, Bildeston, Suffolk, in which the writer stated, with reference to the specimens of Papilio Podalirius in a collection in Suffolk, said to have been captured at Sevenoaks, as mentioned by Dr. Wallace at the October meeting of this Society, that the said specimens were certainly taken at Sevenoaks by him (Captain Russell), but in the immediate vicinity of the residence of a lady who had a day or two previously set at liberty a number of specimens of this butterfly, which she had bred from pupæ imported from the Continent; there could of course be no doubt that those captured by him were part of the imported brood. Captain Russell also detailed with much minuteness the circumstances attending the capture of several specimens of Callimorpha Hera and one of Eulepia grammica on a precipitous bank near Wrexham, North Wales, on the 27th of July, 1859: one of the examples of C. Hera is now contained in the indigenous collection at the British Museum.

Mr. F. Walker communicated descriptions of Exotic Lepidoptera contained in the collections of W. W. Saunders and A. Fry, Esqrs.

The Secretary called attention to a specimen copy of the first part of Mr. Trimen's new work on the Rhopalocera of Southern Africa, which was on the table, to which he should be happy to receive the names of subscribers.

The Secretary also read some descriptions of South-African Lepidoptera by Mr. R. Trimen, including species pertaining to the families Satyridæ, Lycænidæ and Hesperidæ.

The President announced that the Council had, in compliance with the almost unanimous wish of the Members of the Society, resolved to alter the hour of meeting from eight to seven o'clock; and that in future the chair of the monthly meetings would be taken at the latter hour.—*E. S.*

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Insects for Sale.

WILLIAM FARREN, of No. 1, Rose Crescent, Cambridge, has, among many others in fine condition, the following Lepidoptera for sale:—

	s.	d.			s.	d.	
Thecla Pruni	1	6	each	Neuria Saponariæ	0	4	each
Nudaria Senex	1	0	...	Epunda lichenea	0	6	...
Callimorpha Dominula	0	6	...	Pyralis margaritalis	1	6	...
Zeuzera Æsculi	0	9	...	Botys lancealis	0	6	...
Phragmatæcia Arundinis	1	6	...	Anticlea berberaria	1	6	...
Nonagria Hellmanni	5	0	...	Harpalyce sagittaria	3	6	...
Agrotis cinerea	5	0	...	Collix sparsata	1	0	...
... pyrophila	2	6	...	Araxes lotella	0	3	...
Deilephila Galii (bred)	15	0	...				

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